

CLAIMS

1. An electrical connector to make an electrical connection between a first electrical device and an electrical trace of a circuit of a second electrical device, said first electrical device being of a kind which includes two surfaces the planes of which are not parallel to each other, wherein a first of said two surfaces has disposed thereon a first conductive pad region and a second of said two surfaces has disposed thereon a second conductive pad region wherein said first and second conductive pad regions are in electrical connection with each other, said electrical connector comprising:

a housing

at least one conductive element carried by said housing and which includes

a first contact region for engagement with said first conductive pad region,

a second contact region for engagement with said second conductive pad region, and

a third contact region to make contact with said electrical trace of said second electrical device to create an electrical connection thereof with said first and second conductive pad regions

the conductive element(s) carried by said housing to present at least said first contact region in a resiliently movable for compressive engagement with said first conductive pad region and said second contact region in a resiliently movable manner for compressive engagement with said second pad region, each of said first and second contact regions being movable in a direction away from but resiliently biased towards the respective pad regions with which said contact regions are to engage.

2. An electrical connector as claimed in claim 1 wherein said first contact region is deflectable relative to said housing along a path which is not parallel to the path along which said second contact region is deflectable relative to said housing.

3. An electrical connector as claimed in claims 1 or 2 wherein the path along which said first contact region is resiliently movable is substantially transverse to the path along which said second contact region is resiliently movable.

4. An electrical connector as claimed in any one of claims 1 or 3 wherein the path along which said first contact region is resiliently movable, is substantially perpendicular to the path along which said second contact region is resiliently movable.

5. An electrical connector as claimed in any one of claims 1 to 4 wherein said conductive element includes of a fixing region which is engaged to the housing in a secure manner and has dependent therefrom (a) a first leg which includes at or towards a region distal from said fixing region, said first contact region and (b) a second leg which includes at or towards a region distal from said fixing region, said second contact region, said legs being disposed in a resiliently movable manner from said fixing region.
6. An electrical connector as claimed in claim 5 wherein first contact region is positioned by said first leg to become engaged with said first conductive pad region in a manner wherein said first conductive pad is pressed onto said first contact region with negligible movement of said first contact region in a direction over the first conductive pad region and said second contact region is positioned by said second leg to become engaged with said second conductive pad region in a compressive manner with movement of said second contact region in a direction over the second conductive pad region.
7. An electrical connector as claimed in any one of claims 1 or 6 wherein a first electrical device holding means is provided in a fixed relationship to said housing, said holding means able to receive at least part of said second electrical device in a manner so as to hold it in a relationship wherein the first and second contact regions are in a compressive engagement with respective first and second conductive pad regions.
8. An electrical connector as claimed in claims 7 wherein said first electrical device holding means is able to receive at least part of said first electrical device in a manner such that said first conductive pad region is able to advance towards engagement with said first contact region in a direction parallel to the direction of the path of resilient movement of said first contact region, and said second conductive pad region is able to advance for engagement with said second contact region in a manner to slide relative thereto, the advancement also inducing a movement of said second contact region in a direction along said path of resilient movement thereof.
9. An electrical connector as claimed in any one of claims 5 to 8 wherein said second leg includes a section thereof sloping relative to the path of deflection of said second contact region, and which provides a ramp along which said second surface is able to travel in non parallel direction to thereby displace said second contact region along its path of resilient movement during engagement of said first electrical device therewith.

10. An electrical connector as claimed in any one of claims 5 to 8 wherein said first and second contact regions are each movable along a path lying in a plane wherein the plane of said first leg is parallel to the plane of the second leg.

11. An electrical connector as claimed in any one of claims 1 to 9 wherein said housing is affixed to said second electrical device in a permanent manner and is able to receive said first electrical device engaged thereto in a releasable manner.

12. An electrical connector as claimed in any one of claims 1 to 10 wherein said housing has a plurality of said conductive elements spaced apart in an array to each have their respective first and second contact regions engage with a corresponding first and second conductive pad regions of a single PCB.

13. An electrical connector as claimed in any one of claims 1 to 12 wherein the shape of the conductive element is defined by out plane folding from a stamped sheet metal material.

14. An electrical connector formed of a sheet metal material, to provide electrical connection between an electrical trace of a PCB and an electrical trace of a second electrical device said electrical connector comprising

a first contact region provided on or carried by a first leg which extends from a mounted or mounting section engaged or to be engaged to the second electrical device, said first contact region displaceable in a resilient manner relative to said mounted or mounting section in a direction along a first path during such engagement thereof by a first surface of a PCB,

a second contact region provided on or carried by a second leg which extends from said mounted or mounting section, said second contact region displaceable in a resilient manner relative to said mounted or mounting section in a direction along a second path during such engagement thereof by a second surface of a PCB, the first path being perpendicular to the second path

a third contact region engaged or engagable for electrical connection to the electrical trace of said second device

wherein said electrical connector is able to make a two point contact with said electrical trace of said PCD which is provided in part on each of said first and second surfaces to establish at least in part, two flow paths for electricity between said electrical trace of said PCB and said electrical trace of second electrical device.

15. A connector to provide interconnection between a first and second electrical devices which each present electrical connection points between which said connector is to provide electrical connection, said connector comprising,

a housing carrying at least one conductive element, said conductive element which includes a first, second and a base contact region, the said first and second contact region provided on respective legs of said connector which extend in a direction away from said base contact region;

the first contact region is deflectably movable relative to the said housing in a first direction and the second contact region is deflectably movable relative to said housing in a second direction which is perpendicular to the first direction;

wherein said first and second contact regions are to engage and connect in a compressive manner to respective conductive traces of the said first electrical device which are provided on surfaces thereof which are substantially normal to the direction of deflection of the respective contact regions and are electrically connected with each other on said first electrical device.